

CASE STUDY

Effective Noise Mitigation Measures at Construction Site

By soliciting the practical experience with civil contractors, acoustic engineers and site engineers, we realized the emerging concern on noise nuisance given that pools of infrastructure and railway projects were commenced in 2010.

Different active noise mitigation measures have to be adopted to minimize the disturbance, particularly the construction site is located at densely populated area when noise to human being is a concern.

Acoustic noise barrier mat (隔音墊) promoting “One-stop solution”

At the aspect of tackling indoor and outdoor construction noise, one of approaches would be installing acoustic flexible noise barrier mat to reduce the noise transmission from one area to another.

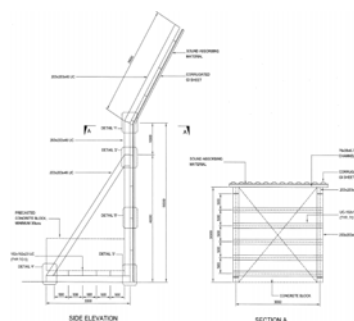
Majority of barrier mat in the market is made out of high mass mineral loaded polymer. Given its flexible nature, it allows easy installation at complex fit-outs, for example mounting on scaffolding and pedestrian hoarding, or affixing on any enclosure for PMEs.

In this literature, we have included few case studies to illustrate the application of our acoustic noise barrier mat and go deeper to its installation method.

Engineer team at Mason Acoustics Limited is delighted to generate innovative and flexible solutions. Look forward to engaging a new sustainable solution with you soon!



Vinyl acoustic barrier mat



Affixing over 480m² of acoustic barrier mat at back of metal hoarding to enhance overall mass, and reaching noise reduction of 20dB(A).

Central Reclamation Project, 2009.

Scaffolding applications

Case 1: Scaffolding as Enclosure

In order to facilitate the construction of future railway system between Mainland China and Hong Kong, an existing footbridge at Sham Mong Road has to be removed in Nov 2010.

However, this demolition work brought noise nuisance to surrounding residential, therefore the Civil Contractor installed vinyl flexible noise on the scaffolding to reduce the noise transmission generated by the demolition machineries.

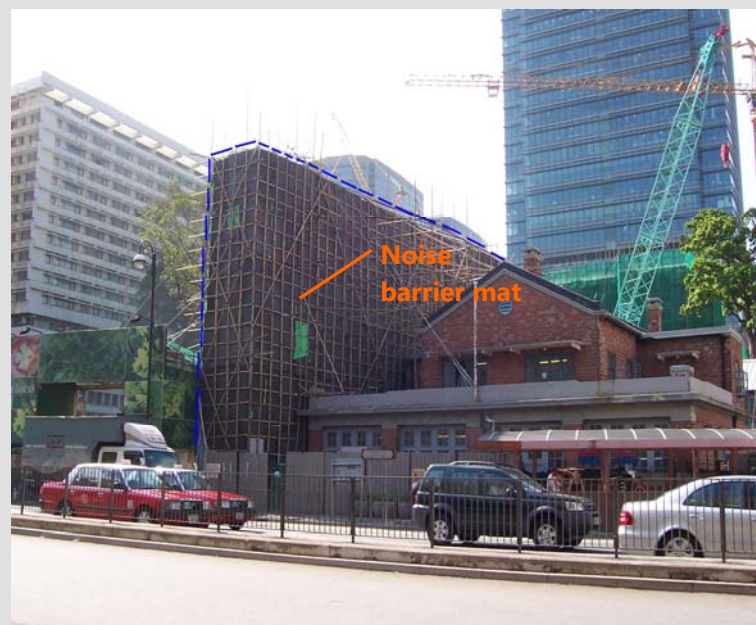
Over 200m² of 4 kg/m² acoustic barrier mat from Mason Acoustics Limited, are installed at the interior of scaffolding by using traps. As a result, the overall noise reduction is around 12 dB(A).



Case 2: Scaffolding as Acoustic Barrier

In 2009, large scale of renovation and demolition work at "1881 Heritage" (Former Marine Police HQ) has induced noise to nearby residents at YMCA Hostel.

Therefore the demolition contractor employed over 150m² of 5kg/m² acoustic barrier on exterior scaffoldings at approx. 10 metre high from ground.



Hoarding applications

Case 3: Construction Hoarding

Large scale of demolition works or Central Reclamation Project (Ph3) has been commenced by CEDD in 2009.

"Queen's Pier", historical building has to be demolished. Unfortunately, the operation of heavy demolition machines (such as hydraulic breaker) generated the noise level over 95dB(A). This significantly creates high level of noise nuisance to the City Hall nearby.

Over 480m² rolls of 5kg/m² acoustic barrier mat were affixed at the back of contractor's tailor-made metal hoarding, to enhance the overall mass. As a result, the overall noise reduction for reinforced hoarding is around 20dB(A).

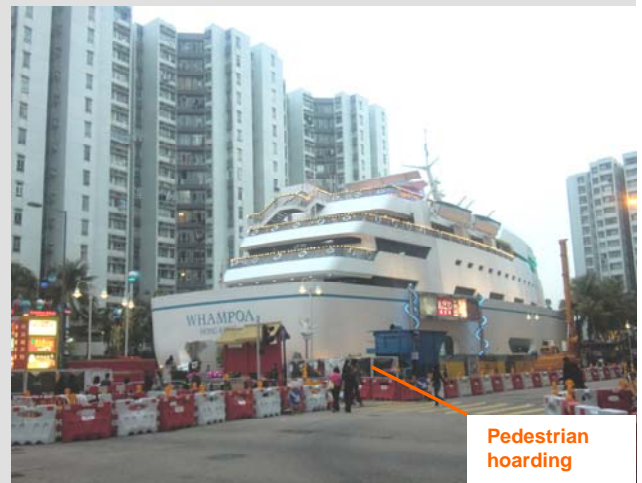


Case 4: Pedestrian Hoarding

Drilling and construction work for new railway station has been conducted at Whampoa residential area in 2011. Given that the drilling site is very close to residential blocks and broadcast station, over 1,200 m² of 4kg/m² barrier mat are affixed on hundred of pedestrian hoardings since the work commences.

EASE OF INSTALLATION

"Plastic trap installation" allows the Civil Contractor ease of installation and time-saving cost, no matter on plastic hoarding, metal hoarding or metal frame which covering the air compressor.



Pedestrian hoarding



Pedestrian hoarding



Metal framing at PME

PME enclosure applications



Case 5: Inside Plywood Enclosure

Since the operation of an Air-Compressor has generated noise disturbance to residential nearby, a partial enclosure using plywood coupled with loaded vinyl 5 kg/m² acoustic barrier mat was constructed.

As a result, this reinforced enclosure is reaching the noise reduction of 19.6dB(A).



Case 6: as Panel Skirt on Steel Enclosure

To facilitate the movement of PME enclosure, sometimes it is fitted with moving wheels. However the gap between the steel plate and floor would lead to noise leakage.

At a project for WSD in 2011, we proposed affixing acoustic barrier mat as a panel skirt at a galvanized steel enclosure. The reinforced enclosure reaches the noise reduction of 24.7dB(A).



Indoor Renovation Work



Case 7: Renovation work at Retail Building

The estate developer of Harbour City converted a 45,000-square feet carpark space located on the first floor of Ocean Centre into retail space in 2004. But the noise generated by the renovation work seriously affect tenant's normal operation and occupants in hotel nearby.

Over 1,000m² of 10kg/m² acoustic barrier mat were employed to reduce the transmission of airborne and impact noise.

Here are other projects adopting our acoustic barrier mat as mitigation measure:

OUTDOOR construction work	
Railway Construction site at Sai Ying Pun	Hoarding
Railway Construction site at Tai Po Kong Site	Hoarding
Central- Wanchai Bypass Tunnel	Hoarding
Civil Aviation Dept New HQ	Hoarding
Shatin Racecourse (extension)	Hoarding
Anderson Road (site formation)	Hoarding
Hong Kong University of Science and Technology	Hoarding
City University of Hong Kong (library extension)	Hoarding
Public Housing Development at Sham Shui Po	Hoarding
INDOOR renovation work	
China Resources Building (49/F, 50/F)	A&A site
Ocean Centre	A&A site
Tsim Sha Tsui Centre	Ceiling of roadshow block
PME enclosure	
Railway Construction site at Aberdeen Channel	Genset equipment
CLP Tuen Mun Electrical Substation	Station equipment
Hong Kong Disneyland Resort Project- Mystic Point	Fan equipment
Hong Kong Jockey Club	Fan equipment



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